

Forage Systems Keeping it Green

Management of forages for future beef success

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IT NEEDS TO WORK TOGETHER

- SOIL
 - Soil Health (microbes, OM, earthworms, fertility, tilth)
 - Species, high quality, high quantity
- PLANTS
 - Type, breed, species
- ANIMAL

SPA cow costs/year

- Over 400 herds from 1991-2007
- Weighted average/year \$458.33.
- Latest costs 2005-2008 are \$493.43.
- Raised/purchased feed costs \$86.55/cow.
- Grazing cost \$92.53.

Variation of Forage Costs

- Raised/purchased feed costs vary from \$67.90 for top quarter to \$106.88 for bottom quarter.
- Grazing costs vary from \$80.75 to \$122.88 for top to bottom quarter.
- Bottom line – these are costs which can be managed and reduced without decreasing beef production.

Forage System Goal

To provide the
Quantity and Quality
of forage needed to meet cattle
nutritional needs throughout the
year and from year to year.

Forage Systems should

- ✓ Provide quality and quantity of forages
- ✓ Provide 365 day forages
- ✓ Be sustainable
- ✓ Be economical
- ✓ Be environmentally friendly
- ✓ Be complementary with other ranch goals

Components of a forage system

- Perennial warm season grasses
- Native pastures
- Winter annual pastures
- Legumes
- Cool season perennial grasses
- Hay and/or silage (standing or stockpiled forages)

New Demonstration



300 Day Grazing Study

- 38 cows on 130 acres
- 10 pastures – used rotational and strip grazing
- Only had to feed 18 days of hay

300 Day Grazing Study

- Total lbs beef produced was projected to be 23,275 but was 36,156 (up from 613 to 951/cow)
- Income (over cost) projected \$85.34 but was 200.41/cow
- Breakeven/cwt was projected to be \$.76 but was only \$.63.

300 Day Grazing Study

- "Cost ran higher than projected in several areas they had no control over. Yet, they were able to DECREASE THE BREAKEVEN COST. THAT'S THE POWER OF TAKING THE LION'S BITE OUT OF COW FEED COSTS."



Base Warm Season Perennial Grasses

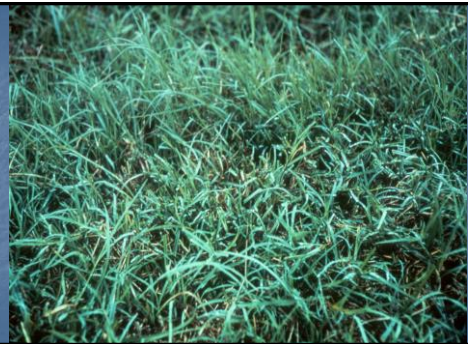
- Bermudagrass (coastal, Jiggs, Tifton 85, seeded – Cheyenne II, Mohawk, Terra Verde)
- Bahiagrass- Pensacola, Tifton 9
- Dallisgrass
- Bluestems, Klein, Eastern Gammagrass

Warm Season Perennial Grasses

- High Quantity
- Low Quality compared to other groups.
- Some varieties are higher quality than others i.e. Tifton 85, Seeded bermudagrasses.

Management for Higher Quality on Warm Season Grasses

- Use higher quality varieties.
- Weed control
- Fertilize according to soil test recommendations.
- Utilize in leafy, higher quality stage of growth.
- Overseed with high quality forages i.e. clovers and ryegrass.



Improved Forages

- Sprigged bermudagrasses – Coastal, Jiggs, Tifton 85, Tifton 44, Alicia, Sheffield, 007, Midland 99, World feeder,others
- Seeded bermudagrasses

Yield of sprigged bermudagrasses

- Coastal 100% (5 year, 92-95, 97)
- Tifton 85 138
- Jiggs 115
- Tifton 44 91
- Tifton 78 101
- Giant 69
- World Feeder 89

Yield during drought '96

- Coastal 3525
- Tifton 85 4116
- Jiggs 1886
- Tifton 44 2306
- World Feeder 2774

Seeding Compared to Sprigging

- **Seed will wait for rain sprigs will not.**
- **You can seed yourself.**
- **Quicker pasture utilization with seeding.**
- **Does not leave soil surface rough and uneven.**



Cheyenne II

- Selected from half sib families that yielded as much or more than Tifton 85.

Management of Warm Season Grasses for Better Quality

- Weed control.
- Fertilize according to soil test.
- Addition of high quality species like ryegrass and/or clover.
- Utilize when leafy and young – rotational grazing.

Weed Control Flowers or weeds?



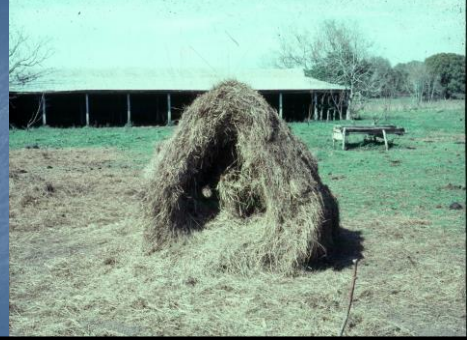
Weeds Compete With Grass For

- ✓ Nutrients
- ✓ Sunlight
- ✓ Moisture

Weeds Look

- ✓ Unproductive
- ✓ Unprofitable
- ✓ Run-down
- ✓ Trashy

This is perception NOT fact!!

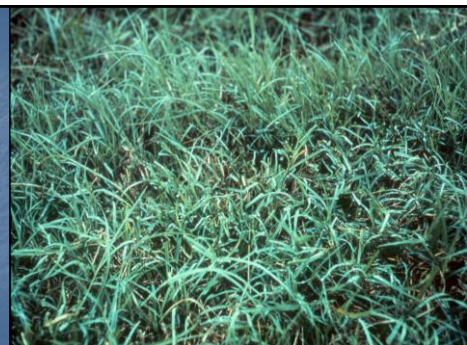


Weed control in improved pastures

- -improves grass production by 2 to 5 pounds per pound of weeds controlled.

Methods of Using Herbicides

- ✓ Broadcast spray
- ✓ Spot spray
- ✓ Wick application
- ✓ Individual plant treatment (foliar, stem)



How to Get a Vigorous, Dense Grass Stand

- ✓ Fertilize according to soil test recommendations
- ✓ Take care of weed problems early
- ✓ Control stock density and grazing
- ✓ Leave standing stubble for faster regrowth

Forage Fertilization and Management

Important for introduced pastures.

Management Considerations

- Knowledge about fertilizer nutrients.
- Management to optimize fertilizer nutrients.
- Use of other methods to supply fertilizer for pastures.

How much is needed to produce a ton of forage?

- 50 pounds of nitrogen
- 10 pounds of phosphorous
- 40 pounds of potassium
- Plus other secondary and micronutrients

How much does that costs today?

- $50 \text{ N} \times .60/\text{lb} = \30.00
- P and K = \$26.00
- That's cost about \$56.00/ton of grass produced in fertilizer alone if we had to get every nutrient from a fertilizer application.
- That's like about \$33.60 of fertilizer in every hay bale.

Grazing vs Hay Production

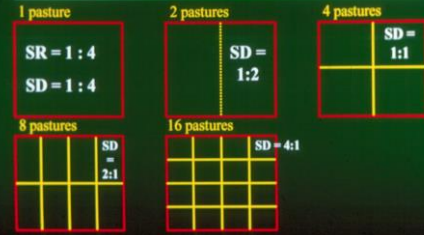
In hay production, all the nutrients in the hay bales is removed from the field and must be replaced if you are going to make more hay.

In grazing, only a small part of the nitrogen, phosphorous and potassium remains in the animal. The rest is recycled back to the pasture in the feces and urine.

Nutrients Used by Different Management Systems

	Grazing 500 lb steer	Hay 6 Tons/Ac
Nitrogen	18	300
Phosphorus	9	60
Potassium	1	240

The effects of number of pastures on stock density (SD), maintaining the same stocking rate (SR)



Other fertility management

- Time of application.
- Weed control.
- Use of clovers (legumes) to supplement or replace nitrogen needs for grazing.

Summer Annual Grasses

- Examples – sorghum sudangrass hybrids (haygrazers), millets
- Higher quality than warm season perennial grasses.
- Good production if rainfall cooperates.
- Must be planted yearly so fairly expensive and risky.
- Used at times for hay and to fill in mid summer forage needs.

Cool Season Perennial Grasses

- Good Quality – Perennials
- Site specific. Management specific.
- Where can be grown will give high quality grazing October – June.
- Example: Texoma Tall Fescue (safe endophyte)

Cool Season Annual Grasses

- Ryegrass, Oats, Wheat, Rye, Barley
- High quality grazing for any beef animal.
- Annuals so must be planted yearly or be a reseeding annual.
- Management needed to get grazing in winter.

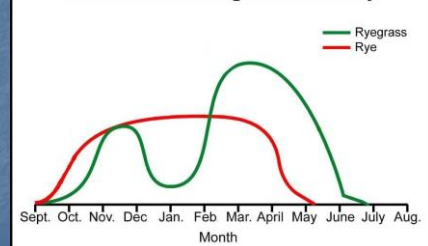
Where are Winter Annuals used?

- Overseeding warm season pastures for winter grazing
- In a prepared seedbed
- Hay production
- Can be used in mixtures
- Also used in cover crop systems

Which Winter Annual to use?

- Annual ryegrass or small grains? Considerations?
 - Length of the grazing season?
 - Overseeding or in a prepared seedbed?
 - How much yield do we need?
 - And when do we need it?
 - Do we need to add clover?
 - Price of seed?
- In order to know which winter annual to use we have to know the differences between them

Seasonal Forage Availability



Annual Ryegrass

- High Quality Forage
- Very Palatable
- Easily Established
- Long Grazing Period
- Economical

Not All Ryegrass is the Same

Characteristics of Ryegrass Varieties

Variety	Maturity	*Crown Rust Index	Cold Tolerance
Big Daddy	Mid-late	2.7	Med
Gulf	Early-mid	4.5	Low - med
Jumbo	Late	1.6	Med - high
Marshall	Late	4.3	High
Passerel Plus	Late	3.2	High
Ribeve	Mid	4.5	Med - high
Tam 90	Mid-late	3.6	High

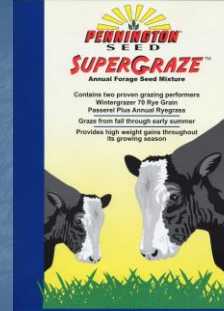
*Crown Rust Index - 0-3 highly resistant, 3-5 resistant, 5-7 susceptible and above 7 highly susceptible
 Source: Publication SS-MGR-99, Florida Group, Inc. - Rev. January 2005

Annual Ryegrass

Diploid Varieties: **Tetraploid**

varieties:

Gulf	Prine
Jackson	Jumbo
Marshall	Nelson
Passerel Plus	Spicer
Flying A	Marvel

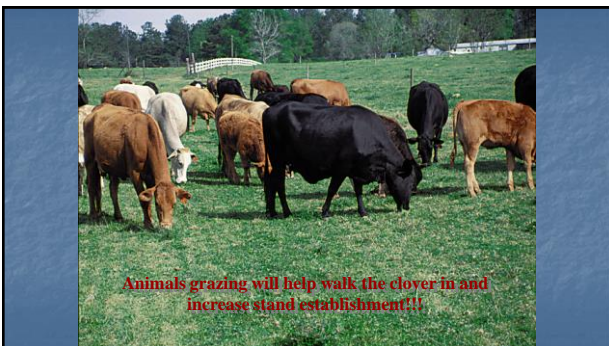
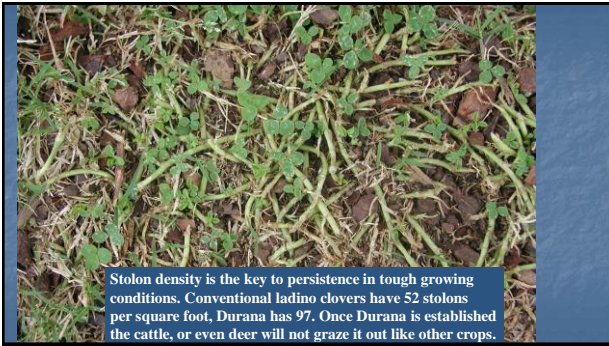


Legumes

- Examples: clovers, vetch, alfalfa
- Highest quality forage.
- Used to overseed in summer perennial pastures or mixed in winter pastures.
- Fixes nitrogen.
- Reduces days of hay and supplemental feeding.

Adding clovers to a pasture will reduce the cost to produce a pound of beef by 50%.





Weed Control with a Perennial Clover

- A good stand of clover is good weed control.
- White clover can be sprayed with 1 to 1.5 pints of 2,4 D without killing it.
- 2,4 DB is a option.
- Mowing, wicking, other mechanical methods

Grazing Management with Legumes

- Fall – get grass grazed down for clover growth (more important establishment year)
- Continue to graze pasture to keep grass from becoming too competitive in fall.
- With Durana and Patriot you don't have to remove or reduce grazing in Spring for it to seed out.



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Grazing April - June

- Continue to heavy graze winter annual pastures/clovers.
- Start rotation grazing summer perennial pastures.
- Excess growth can be used for hay if needed.
- Keep stocking rate so excess growth carried into dry months of July – August.

July-September

- Continue grazing warm season pastures.
- Keep rotating so newer growth is being grazed by animals with higher requirements (front grazers).
- In september graze a pasture and fertilize for standing hay.

October - December

- Graze down summer perennial pastures to be overseeded. Get excess growth off for planting.
- Plant cool season grasses and legumes.
- After frost graze standing hay pasture to allow winter pastures to get established.
- If winter pastures are short when needed use limit grazing with hay to stretch forage.
- Cool season perennial pastures can be used Oct – Jun.

January - March

- Use rotational or limit grazing in January and February to keep winter annual pastures growing.
- Start heavy grazing winter pastures in March to keep up with growth.
- Use hay or silage only if needed. Store excess in barn for use in coming years.

Using a forage system to keep green year round

- Graze warm season base grass during spring into fall.
- Let some of the warm season grass stockpile for early winter grazing.
- Overseed with ryegrass and clover.
- Graze Durana/Patriot clover from Oct. thru June
- Keep some hay in barns but plan not to feed it.
- Use rotational grazing.

Forages and season of use examples

- Cheyenne II, Mohawk, Terra Verde bermudagrass – April thru November
- Passerel, spicer ryegrass, wintergrazer 70 rye, supergrazer – Late November thru April/May
- Texoma Tall Fescue – October thru June.
- Durana/Patriot white clover – November – June.

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If you always do
what you've always done

You will always get
what you've always got

If you want
what you never had

You have to do
what you've never done

